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TO: Chavonda Jacobs-Young
Administrator
Agricultural Research Service

ATTN: Sharon Drumm
Chief of Staff
Administrator's Office

FROM: Gil H. Harden
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SUBJECT: ARS: U.S. Meat Animal Research Center Review – Interim Report

The Agricultural Research Service (ARS) is the U.S. Department of Agriculture's (USDA) principal in-house research agency. The U.S. Meat Animal Research Center (USMARC), located in Clay Center, Nebraska, is an ARS research facility operated in collaboration with the University of Nebraska-Lincoln (UNL). USMARC's mission is to develop scientific information and new technology to solve high priority problems on beef, sheep, and swine.

On January 19, 2015, *The New York Times* published an article titled "U.S. Research Lab Lets Livestock Suffer in Quest for Profit." The article contains a number of statements regarding animal care and animal mortality levels at USMARC. Following the publication of the article, the USDA Office of Inspector General (OIG) received requests to examine the specific allegations made in the article and related conditions and procedures in place at USMARC.

OIG began its review on March 10, 2015, of USMARC's research practices and operations in response to concerns expressed by Congress and reported by the media regarding animal welfare. As our work continues, we will examine ARS' oversight and monitoring of USMARC, including how it relates to animal welfare. This Interim Report is intended to update you and Congressional requesters on our progress and initial observations on work completed to date.

Based on our review of *The New York Times* article and subsequent documentation obtained from ARS personnel, we identified 33 statements from the article to evaluate and attempt to determine their veracity. We have since performed fieldwork at USMARC; reviewed available

ARS and UNL documentation dating back to 1983; interviewed key individuals, including over 30 current and former ARS and UNL personnel, and members of the Secretary's review panel; and researched meat industry and agricultural research statistics and norms. Given the sensitive nature of this review, we are providing information on the current status of our fieldwork. This information provides additional context to the statements made in *The New York Times* article.

To date, we have made significant progress towards the completion of our fieldwork on a majority of the 33 statements. However, the information presented in Exhibit A is subject to change, as we have not yet finalized our work on any of the 33 statements. Our preliminary observations are contained in Exhibit A of this document. At this time, we have not obtained comments on our preliminary observations from *The New York Times* reporter or the primary complainant, although we plan on contacting them to provide them the opportunity to provide additional information. At the completion of our fieldwork, we will issue a final report detailing the results of our review, including any findings, conclusions, and recommendations.

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

We appreciate the courtesies and cooperation extended to us by ARS and UNL personnel during our audit fieldwork and subsequent discussions. This document contains publically available information and will be posted, in its entirety, on our website (<http://www.usda.gov/oig>) in the near future.

Exhibit A: Status of Fieldwork on Selected Items

After reviewing *The New York Times* article titled “U.S. Research Lab Lets Livestock Suffer in Quest for Profit,” published January 19, 2015, we selected 33 specific statements to evaluate in an attempt to determine the veracity of the statements. The following is a listing of these 33 statements and a brief discussion of the current status of our evaluation of each statement. The status reflects our observations to date. These observations may be modified, as warranted, based on the remaining fieldwork to be performed to satisfy our audit objectives.

For reference, here is a link to *The New York Times* article:

<http://www.nytimes.com/2015/01/20/dining/animal-welfare-at-risk-in-experiments-for-meat-industry.html>

Statement Number	Article Statement	Current Status of Fieldwork
1	“At a remote research center on the Nebraska plains, scientists are using surgery and breeding techniques to re-engineer the farm animal to fit the needs of the 21st-century meat industry.”	Through a review of USMARC documents, we have determined that surgery and breeding have been used as part of the research performed at USMARC.
2	“Pigs are having many more piglets — up to 14, instead of the usual eight — but hundreds of those newborns, too frail or crowded to move, are being crushed each year when their mothers roll over.”	<p>Per the <i>2014 U.S. Pork Industry Productivity Analysis</i>, issued by the National Pork Board, the average number of piglets in a litter is around 13. After reviewing USMARC data and documents, we determined that the average number of piglets per litter at USMARC since 1985 has been approximately 11.</p> <p>We determined that the prevalence of lightweight piglets at USMARC is in line with industry norms.¹</p> <p>Through a review of USMARC data, we determined that hundreds of piglets die each year as a result of being crushed by their mothers. Through our research, we determined that this is one of the most common causes of preweaning piglet mortality in the pork industry. We</p>

¹ Per *nationalhogfarmer.com*, pigs born weighing less than 2.2 pounds are considered lightweight. Lightweight births usually account for approximately 15 percent of pig births within the pork industry. From 1985 to 2014, lightweight pigs accounted for approximately 14.8 percent of pig births at USMARC.

Statement Number	Article Statement	Current Status of Fieldwork
		determined that USMARC's live birth preweaning mortality rates were in line with industry norms. ²
3	"Cows, which normally bear one calf at a time, have been retooled to have twins and triplets, which often emerge weakened or deformed, dying in such numbers that even meat producers have been repulsed."	We have no observations on this statement at this time.
4	"Last Mother's Day, at the height of the birthing season, two veterinarians struggled to sort through the weekend's toll: 25 rag-doll bodies. Five, abandoned by overtaxed mothers, had empty stomachs. Six had signs of pneumonia. Five had been savaged by coyotes."	Through a review of USMARC data, we have determined that a total of 25 sheep died on May 10 and 11, 2014. Of these sheep, five were coded as having died as a result of "starvation-empty stomach" ³ and another five were coded as having died as a result of a "predator strike." To date, we have not found evidence clearly supporting that six of the sheep had signs of pneumonia.
5	"... to be dumped in a vast excavation called the dead pit."	During our tour of the USMARC facility, we observed the "dead pit." We estimate the "dead pit" to be a trench measuring approximately 2 feet wide, 10 feet long, and at least 15 feet deep. Animal remains are placed in the trench and immediately covered with dirt. Based on research into agricultural practices, we determined that the burial of animal remains, particularly sheep remains, is a common and legal

² Live birth preweaning mortality refers to piglets that were born alive (i.e. not stillborn) and died prior to weaning. To calculate the live birth preweaning mortality rate, the number of live born pigs that died prior to weaning is divided by the total number of live born pigs. The National Pork Board's *2014 U.S. Pork Industry Productivity Analysis* contains average preweaning mortality rates and associated standard deviations from 2008 through 2013. We considered any rate falling within one standard deviation of the quoted rates to be within industry norms. From 2008 through 2013, all of USMARC's live birth preweaning mortality rates fell within one standard deviation of the rates contained in the National Pork Board's analysis for those years.

³ Based on interviews of current and former USMARC personnel, the starvation code within the USMARC data does not indicate that animals were not provided adequate food by USMARC personnel. They explained that this code is used when an animal is found dead with no fat on its body. These deaths generally occur early in life as a result of complications with nursing.

Statement Number	Article Statement	Current Status of Fieldwork
		practice in agriculture.
6	“Little known outside the world of big agriculture, the center has one overarching mission: helping producers of beef, pork and lamb turn a higher profit as diets shift toward poultry, fish, and produce.”	The stated mission of USMARC is “to develop scientific information and new technology to solve high priority problems on beef, sheep and swine.” ⁴
7	“The research to increase pig litters began in 1986;”	By reviewing USMARC documentation, we determined that research into pig litter size at USMARC began in 1986. We determined that the live birth preweaning mortality rates for the two populations associated with this research were generally in line with industry norms. ⁵
8	“... center scientists have been operating on pigs’ ovaries and brains in an attempt to make the sows more fertile.”	Through a review of USMARC documentation and interviews of USMARC personnel, we determined that surgeries involving pigs’ ovaries have been a part of USMARC’s research. Our fieldwork found that surgeries performed in connection with research are focused on obtaining information on how various biological aspects interact and affect pig fertility, which, in turn, could be utilized by the industry in making selection ⁶ and management decisions. While surgery on pigs’ brains was approved as part of a research plan at USMARC, we did not find any evidence that such surgery was actually performed at the facility.

⁴ *The Roman L. Hruska U.S. Meat Animal Research Center*, obtained on February 20, 2015.

⁵ For the definition, calculation, and source for industry norms related to live birth preweaning mortality, see Footnote 2. From 2008 through 2013, USMARC’s live birth preweaning mortality rates for the two primary populations related to the facility’s pig litter size research fell within one standard deviation of the rates contained in the National Pork Board’s analysis for 4 of those 6 years. For the other two years, USMARC’s rate was slightly below industry norms one year and was slightly above in the other year.

⁶ Selection refers to the action of a breeder in selecting individual animals from which to breed, in order to obtain some desired quality or characteristic in the descendants.

Statement Number	Article Statement	Current Status of Fieldwork
9	“Of the 580,000 animals the center has housed since 1985, when its most ambitious projects got underway, at least 6,500 have starved.”	Through a review of USMARC data, we determined that over 6,500 animals have been coded as having died due to starvation since 1985. Based on interviews of current and former USMARC personnel, the starvation code within the USMARC data does not indicate that animals were not provided adequate food by USMARC personnel. They explained that this code is used when an animal is found dead with no fat on its body. These deaths generally occur early in life as a result of complications with nursing.
10	“A single, treatable malady — mastitis, a painful infection of the udder — has killed more than 625.”	We have no observations on this statement at this time.
11	“The center added a daring twist: pasture lambing, an attempt to take domesticated sheep, which are dependent on human help, and create a breed that can survive on its own.”	We have reviewed USMARC documentation and performed extensive research into the sheep industry. We have found that pasture lambing is a common management practice in the United States that has been utilized by producers for a number of years. ⁷ Additionally, researchers outside of USMARC have studied pasture lambing prior to the commencement of the research at USMARC. ⁸
12	“They withheld help for the newborns, typically leaving them in the pastures — till death, if necessary — to test whether mothers would respond to the young ones’ growing desperation.	We have no observations on this statement at this time.

⁷ An Animal and Plant Health Inspection Service study on lambing management practices in 2011 found that 69.4 percent of lambs born in the western United States, 59.4 percent of lambs born in the central United States, and 23.6 percent of lambs born in the eastern United States were born using a pasture lambing management system.

⁸ For example, “Lambing Ewes Outside as an Integral Part of Low Input Sheep Production in the Mid-Appalachian Region,” *Animal Sciences Research and Reviews*, Special Circular 156. The Ohio State University. Accessed at <http://ohioline.osu.edu/sc156/sc156_44.html> on March 30, 2015.

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	<p>“Cristiano Bouéres, a visiting student from Brazil, was assigned in 2012 to gather the dead lambs as part of his veterinary program at the university, and told to ignore the rest.</p> <p>““Some days, 30 to 40 percent of the lambs were dead, and some of those still alive were in bad condition, separated from the moms, and they would be dead the next morning,’ he said, dismayed and bewildered by the gulf between the experiment and his training. ‘As a vet, you always appreciate animal welfare, and you want to have all of your patients taken care of and looking good and being fed.’”</p> <p>[....]</p> <p>“In a 2011 memo, the experiment’s lead scientist, Kreg A. Leymaster, beseeched the center’s director for help after 12 lambs were killed in four days. The center added more guard dogs, but in just the first half of 2014, records show, 21 lambs were killed.”</p>	
13	<p>“Out in the fields, the hailstorm sent the next day’s body count soaring to 110. Death rates in the past three years have ranged between about one-quarter and one-third of the lambs, far beyond the 10 percent that many</p>	<p>We have no observations on this statement at this time.</p>

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	industry experts say is considered acceptable in sheep farming.”	
14	<p>“Months into his new job at the center in 1989, Dr. Keen said, he got a call from a fellow worker asking him to help with a ‘downed cow.’</p> <p>“There was a young cow, a teenager, with as many as six bulls,” he recalled. “The bulls were being studied for their sexual libido, and normally you would do that by putting a single bull in with a cow for 15 minutes. But these bulls had been in there for hours mounting her.</p> <p>“The cow’s head was locked in a cagelike device to keep her immobile, he said. ‘Her back legs were broken. Her body was just torn up.’</p> <p>“Dr. Keen wanted to euthanize the animal, but the scientist in charge could not be tracked down for permission. A few hours later, the cow died.”</p>	We have no observations on this statement at this time.
15	“A year before Dr. Keen encountered the dying cow, Robert A. Downey, executive director of the Capital Humane Society, in Lincoln, Neb., alerted by the staff, complained to the center director. ‘Experimental surgery is being performed in some (not all) cases by untrained, unskilled and	We have no observations on this statement at this time.

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	unsupervised staff,' Mr. Downey wrote. "This has resulted in the suffering of animals and in some cases the subsequent death of animals.'"	
16	"During a visit, he said, he saw animals headed to surgery that fell from carts or were pushed to the floor by their handlers,"	We have no observations on this statement at this time.
17	"The center does not have the veterinarians to be present during experiments, even if it wanted them to. Twenty years ago, it employed six scientists with veterinary degrees..."	<p>We have interviewed current and former ARS officials. We have found that USMARC previously employed a number of scientists who also possessed veterinary degrees. A scientist's primary responsibility is to conduct research, and thus would be present at any experiments they conducted, whether they have a veterinary degree or not. All scientists, regardless of whether or not they have a veterinary degree, have the same animal care responsibilities.⁹</p> <p>The primary responsibility for animal care falls to the Veterinary Medical Officer (VMO), who attends some surgeries (and has the right to attend/participate in any and all surgeries or other procedures) and reviews health records to ensure the proper care of animals, including animals on which surgery was performed. The VMO receives assistance from an experienced veterinary technician, along with faculty and students from the Great Plains Veterinary Education Center, which includes four additional veterinarians. USMARC has unsuccessfully attempted to hire scientists who are also Doctors of Veterinary Medicine.</p>

⁹ Per ARS Directive 635.1, all research scientists are to ensure that they personally, their technicians, caretakers, students, and others follow regulations and standards for humane care of animals used in any manner by them and/or their subordinates.

Statement Number	Article Statement	Current Status of Fieldwork
18	<p>“That veterinarian, Shuna A. Jones, wrote to scientists and managers in 2011 and 2012 with a variety of concerns, including barns so stuffed with pigs that workers could not clean them, resulting in spates of diarrhea and respiratory disease. ‘This is a scheduling nightmare,’ wrote Dr. Jones, who declined to be interviewed. ‘We have pigs everywhere.’”</p>	<p>Through a review of USMARC data and interviews of USMARC personnel, we determined that this email stemmed from USMARC changing its farrowing system. For a brief period during the transition, the two farrowing systems overlapped and created a hectic situation. Our review of USMARC’s swine health data did not find evidence that there was a marked increase in diarrhea or respiratory diseases during this period. Furthermore, we determined that the live birth piglet mortality rates for this period were within industry norms.¹⁰</p>
19	<p>“Thirty to 40 have died on average each year of exposure to bad weather, records show — not including storms in which hundreds have perished, center scientists say.”</p>	<p>Through a review of USMARC data, we determined that, on average, approximately 43 cattle have died annually due to exposure, including those that died in storms. We determined that the cattle deaths as a result of exposure to weather from 1985 to 2014 are generally in line with industry norms.¹¹</p>
20	<p>“Dr. Keen, who now works for the University of Nebraska-Lincoln, said he and his students were startled last March to come across an emaciated ewe, in plain view of center employees, unable to eat because of a jaw abscess that had likely been growing for months. The ewe eventually died...”</p>	<p>We have no observations on this statement at this time.</p>
21	<p>“...becoming the 245th animal to succumb to an abscess since</p>	<p>We have reviewed USMARC data. We found that more than 245 animals have died</p>

¹⁰ See Footnote 2.

¹¹ According to an Animal and Plant Health Inspection Service’s report titled *Cattle and Calves Nonpredator Death Loss in the United States, 2010*, weather related deaths in beef operations accounted for up to approximately 15 percent and 22 percent of nonpredator deaths in cattle and calves, respectively. From 1985 to 2014, weather related deaths have accounted for approximately 10 percent of nonpredator deaths of all live born cattle (i.e. cattle and calves) at USMARC.

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	1985.”	at USMARC from abscesses since 1985. The 30-year mortality rate specifically related to abscesses was about 0.006, 0.042, and 0.081 percent in cattle, swine, and sheep, respectively. ¹²
22	“Visiting the center in the late 1980s, the renowned animal welfare expert Temple Grandin approached a herd of cows. They panicked. ‘When cattle run away, that’s indicative of rough handling, screaming and yelling,’ said Ms. Grandin, who gave the center a report suggesting ways to treat cattle more humanely.”	<p>After reviewing Ms. Grandin’s report to USMARC, we determined that Ms. Grandin stated that the behavior of some cattle that she observed at one particular building at the facility may indicate rough handling. She also wrote that she had heard of instances of rough handling or yelling by certain employees, though she acknowledges that she could not verify whether these accusations were true. In her report, Ms. Grandin also noted good cattle handling and employee behavior that she observed at numerous buildings.</p> <p>Furthermore, we spoke to cattle consultants that have visited USMARC in recent years and all of them stated that they had never observed any mistreatment of animals at the facility.</p>
23	“Roger Ellis, a scientist and veterinarian who now works for a cattle nutrition company, said that when he determined about 10 years ago that a sheep had died at least in part from neglect, a center official pressed him to ‘soften the diagnosis.’ Dr. Ellis said that he refused, and that the center had an outside veterinarian change the death record.”	We have no observations on this statement at this time.

¹² To calculate the mortality rate, we divided the total number of abscess-related deaths in a species since 1985 by the total population of animals in that species that have been housed at USMARC since 1985. If an animal was housed at USMARC multiple years since 1985, it was counted as an individual animal each of those years because the animal had the opportunity to die from abscess(es) each year (i.e., if an animal was housed at USMARC for five years, it would be counted in the total population five times for this calculation).

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24	<p>“An animal manager, Devin M. Gandy, complained in 2012 that swine were kept in pens so small, 4 feet by 4 feet, that they appeared to violate basic rules on animal care.”</p>	<p>Through a review of USMARC documentation and interviews of USMARC personnel, we determined that an email was written expressing concerns about pen sizes and that a USMARC scientist responded with a comment about “a lot of time being wasted addressing a non-issue.” As indicated by the email chain and our own interviews, the [REDACTED] [REDACTED] [REDACTED] looked into the situation and concluded everything was in order. Furthermore, within the same email chain, the individual was praised by the USMARC [REDACTED] for having brought the issue to everyone’s attention; the [REDACTED] stated that animal welfare issues will never be considered a “waste of time.” Based on our review of the description of the circumstances, it appears that the pen size did, in fact, meet the space recommendations contained in the 1988 <i>Guide for the Care and Use of Agricultural Animals in Agricultural Research and Teaching</i>.^{13,14}</p>
25	<p>“Geoffrey Hirsch, a former technician, recalled helping with a routine procedure about 12 years ago to extract lung tissue from the carcass of a young pig. But efforts to euthanize the pig had failed, he said; it was still thrashing and gagging. Worse, Mr. Hirsch said, the scientist who had erred ‘seemed to be getting some kind of enjoyment out of this thing,</p>	<p>We have no observations on this statement at this time.</p>

¹³ Published by *Consortium for Developing a Guide for the Care and Use of Agricultural Animals in Agricultural Research and Teaching*, March 1988.

¹⁴ The most current version of this document is dated January 2010. We noted that the minimum floor area recommendation for adult swine in the current version matches the recommendation in the March 1988 version.

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	<p>talking and shouting at the animal,” ‘How do you like that, pig?’ Stuff like that. The whole process was shocking.”</p> <p>The scientist leading the trial stormed back to his office to write a complaint about the animal’s treatment, after informing his boss, William Laegreid. ‘There were ill feelings towards him and me and the unit after that,’ recalled Dr. Laegreid, who now directs the veterinary science program at the University of Wyoming.”</p>	
26	“As for Dr. Keen, his attempts to raise alarms culminated in May...”	We have no observations on this statement at this time.
27	“Yet unsettling side effects surfaced. Some 95 percent of the females born with male siblings had deformed vaginas.”	Through interviews of multiple veterinarians and our own research, we determined that the deformity referenced by the article is called “freemartinism.” ¹⁵ We determined that it is a very commonly known condition that results from a male/female twin set, rather than a unique side effect that arose as a result of the Twinning Project. Furthermore, multiple veterinarians have confirmed that, other than being sterile, animals with this condition suffer no ill effects or pain and can still enter the food supply.
28	“When the Twinning Project’s lead scientist retired in 2013, no one stepped up to succeed him. The surviving cows were sold,	We have interviewed USMARC officials and reviewed USMARC data and documentation. We found that USMARC began dispersing its twinning herd before

¹⁵ Freemartinism is one of the most commonly found forms of intersexuality in cattle. A bovine freemartin is a sterile female calf, born with a male twin, that shows an underdeveloped or mis-developed genital tract due to the in utero passage of male hormones between the twins. The condition is found in over 90 percent of cattle from these types of pregnancies.

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	though the center is still trying with little success to sell the bulls' semen."	the Twinning Project's lead scientist retired. USMARC has only actively attempted to sell its Twinning Project's bull semen once, in a 3-day online auction, and was able to sell over 40 percent of the semen lots offered for sale.
29	"...the Agriculture Department requires that the center do what many universities and companies do: appoint a review committee that holds regular meetings, keeps minutes and approves or rejects each experiment after carefully evaluating animal safety."	<p>We have reviewed ARS Directives and USMARC documentation and interviewed USMARC officials. We found that USMARC is required to appoint an Institutional Animal Care and Use Committee (IACUC) that holds meetings, keeps minutes of meetings, and approves or disapproves proposed experiments that involve animal subjects.¹⁶</p> <p>In February 2015, the Secretary of Agriculture appointed an Agricultural Research Service Animal Handling and Welfare Review Panel (ARS-AHWRP) to review animal care and well-being policies, procedures, and standards. On March 30, 2015, the ARS-AHWRP reported that it found the IACUC at USMARC was not adequately fulfilling its intended role.</p>
30	<p>"However, Gene White, a retired university veterinarian and scientist who sits on its animal care committee, said the change occurred because the school was seeking accreditation, which imposes stringent requirements.</p> <p>"We had to have more control over the animals out there, which was not acceptable to the U.S.D.A,' Dr. White said."</p>	Through interviews of UNL and USMARC personnel, we determined that personnel at UNL did not believe the transfer of ownership was an effort by USMARC to avoid the additional oversight that would result from UNL seeking accreditation. The change in ownership was reportedly made as a result of financial considerations between UNL and USMARC. Furthermore, the accreditation that UNL sought, and has since received, required a site visit to all facilities providing care to animals owned by the University. The transfer did not result in USMARC being exempt from

¹⁶ ARS Directive 130.4, dated August 1, 2002.

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		receiving a site visit from the accrediting organization, since UNL still owned some cattle located at USMARC after the transfer. The accrediting organization did not identify any significant issues regarding animal welfare at USMARC during its site visit to the facility.
31	“Last year, the center set out to show that its cows could thrive on a growth stimulant called Zilmax. Months earlier, the drug had been withdrawn by its manufacturer, Merck & Company, amid concern in the meat industry that it caused rare complications, like hooves that slough off, and was associated with higher death rates.”	Through a review of USMARC documentation and our own research, we determined that Zilmax ¹⁷ was withdrawn from the market in August 2013. ¹⁸ We determined that while USMARC has conducted research involving Zilmax since the drug was removed from the market, none of these experiments included an objective to prove that cows could thrive on the stimulant. ¹⁹
32	“Last February, Katherine Whitman, a University of Nebraska veterinarian who works at the center, proposed an experiment to find more effective pain medicine for two common procedures on sheep: tail removal and castration.”	Through a review of USMARC documentation and interviews of USMARC personnel, we determined that a proposal was submitted for the experiment described in the article, and that proposal was turned down by a USMARC scientist because it did not fall into one of the two approved objectives for sheep research at USMARC. ²⁰ All research at USMARC is required to meet approved research objectives in order for appropriated money to be expended on it. Accordingly, as the research proposed did not relate to either of the approved research objectives for sheep,

¹⁷ Zilmax is a beta-agonist, a class of growth promotants.

¹⁸ The manufacturer cited the desire to study potential causes of lameness and other mobility issues.

¹⁹ Experiment number 5438-31000-092-04 had an objective of to “determine if feeding [Zilmax] decreases or increases the energy requirements of finishing beef steers.” Experiment number 5438-31000-092-07 had an objective of to “estimate the effects of open vs. shaded pens of cattle with and without [Zilmax] on heat stress, animal performance, and carcass characteristics.”

²⁰ The two approved objectives related to sheep research at USMARC concerned 1) reducing the prevalence of ovine progressive pneumonia in sheep and 2) developing and evaluating an easy-care maternal line of prolific hair sheep.

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		the research project was not approved.
33	“Another reason for the denial: The center said it lacked the expertise to assess the pain felt by animals.”	Through a review of ARS’ responses to the article’s author’s inquiries, we found that USMARC stated that it lacked the necessary expertise to perform the proposed research because it did not have any animal behaviorists, stress physiologists, or other experts on staff that would be required to collect the necessary information. During our interviews at USMARC, USMARC staff stated they are able to tell if an animal is in pain, but they do not have the expertise necessary to objectively measure pain in a manner that would have allowed such research to pass a peer review. ²¹ Through a review of USMARC documentation, we determined that USMARC does not have any animal behaviorist or stress physiologist positions.

²¹ A peer review is a process through which an article containing scientific results is subjected to review by other scientists to ensure that it meets scientific standards before the article is accepted for publication in a scientific journal.

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